

specify a mode. What is further needed is a system, method, and user interface that allows a user to retrieve directory records according to any of a number of different fields (such as first name, last name, initials, and the like) without having to specify which field is being searched on. What is further needed is a technique for performing iterative filtering of a directory with respect to multiple fields concurrently, including stored fields, derived fields, and/or combination fields.

## **Summary of the Invention**

**[0031]** The present invention performs multi-context iterative directory filtering in a device having multiple-value keys. The user may perform direct-dialing on the same keys that are used for iterative directory filtering. The invention determines which operation the user intends by analyzing the entered keystrokes, and activates the appropriate feedback and functionality for the determined operation. In one aspect, where the determination cannot be made, both types of feedback are shown. In another aspect, where the determination cannot be made, the invention assumes the user is attempting directory filtering. In yet another aspect, where the determination cannot be made, the invention assumes the user is attempting direct-dialing.

**[0032]** In one aspect, the invention compares a user-entered series of keystrokes with a set of directory records, where at least some of the keystrokes are associated with multiple values. Directory records that do not match the key-

stroke series are filtered out; directory records that do match the keystroke series are displayed. For those keys having multiple values, filtering is performed using each of the possible values, so that a directory record is filtered out only if it fails to match any of the possible values for the keystroke series. As the user enters additional keystrokes, the invention repeats the filtering process against the directory, so that the set of matching directory records tends to decrease in size with successive keystrokes.

**[0033]** In one aspect, if the user-entered series can be interpreted as both a direct-dial number and a directory lookup operation, the invention provides feedback appropriate for both operations concurrently, and allows the user to select between the two operations either explicitly or by entering additional keystrokes that implicitly (but unambiguously) specify the desired operation.

**[0034]** In another aspect, if the user-entered series can be interpreted as both a direct-dial number and a directory lookup operation, the invention provides feedback appropriate for the directory lookup operation, but allows the user to select between the two operations either explicitly or by entering additional keystrokes that implicitly (but unambiguously) specify the desired operation. If the additional keystrokes specify that the direct-dial operation is desired, the invention deletes the displayed feedback for the directory lookup operation and provides feedback for the direct-dial operation.

**[0035]** In another aspect, if the user-entered series can be interpreted as both a direct-dial number and a directory lookup operation, the invention provides

feedback appropriate for the direct-dial operation, but allows the user to select between the two operations either explicitly or by entering additional keystrokes that implicitly (but unambiguously) specify the desired operation. If the additional keystrokes specify that the directory lookup operation is desired, the invention deletes the displayed feedback for the direct-dial operation and provides feedback for the directory lookup operation.

**[0036]** If, at any point, the user-entered keystrokes unambiguously indicate the type of operation desired, the invention makes the appropriate inference, provides feedback for the desired operation, and proceeds with the desired operation.

**[0037]** For example, in an application where the user may dial numbers directly as well as perform directory lookup functions, the invention may operate as follows. Initially, as keystrokes are entered and both operations are possible, feedback corresponding to the directory lookup operation is displayed. If the user-entered keystroke series does not correspond to any directory record, but does correspond to a numeric sequence, the invention may infer that the user is attempting to dial a number directly. Thus, the invention may remove the directory lookup feedback and instead display feedback appropriate to a direct-dial operation.

**[0038]** Alternatively, as keystrokes are entered and both operations are possible, feedback corresponding to both operations may be displayed. If the user enters a keystroke that does not correspond to a numeric value, the invention may